

**Abstract ID :** 852

**Title :** Fission in maternal lineages of resident killer whales in British Columbia.

**Category :** Behavior

**Student :** Not Applicable

**Preferred Format :** Oral Presentation

**Abstract :** Killer whales in coastal waters of British Columbia have been studied intensively since the early 1970s by means of individual photo-identification. Using data collected during 1973-87, M.A. Bigg and co-workers described an unusually stable social structure in fish-feeding 'resident' whales. These whales were found to live in lineages of maternally-related individuals which appeared to be closed to immigration and emigration. The basic social unit was defined as the 'matrilineal group', which was comprised of a female and her living offspring that always travelled together. Clusters of related matrilineal groups that travelled together the majority of time (> 50% of encounters) were defined as 'pods'. Because individuals showed no dispersal from matrilineal groups, it was hypothesized that new pods form by matrilineal fission, and that this process may take many decades. We report here the results of further analyses of social associations in the 'northern' resident population (16 pods), based on an additional 13 years of observational and photo-identification data (N = 2948 encounters during 1973-2000). These analyses confirm the lack of dispersal of individuals from matrilineal groups, and documented numerous cases of matrilineal fission within pods in this growing population. Although there was considerable interannual variability in the strength of bonds within pods, all pods that were initially composed of 2 or more matrilineal groups showed gradual splitting along these matriline. In most cases, formerly cohesive matrilineal groups spent the majority of time apart in recent years. The few pods that did retain their long-term stability were composed of single matrilineal groups. This study thus supports the hypothesis that pod formation results from matrilineal splitting, but shows that this process may take place over shorter time periods than originally thought. Rates of matrilineal fission are likely related to a combination of ecological, social and demographic factors.